

3) Sustained over current

This meter is capable of continuous use at less than 200% of rated current.

4) Other characteristics are in accordance with the JIS C 1102 "Indicating electric instrument".

3. Constants

- 1) Scale angle : 76°
 - 2) Scale length : 75 mm
 - 3) Full-load torque : 550 g-mm
 - 4) Outer diameter of the measurable electric wire : 25 mm
 - 5) Net weight : 1.8 kg
- (By K. Shimoda, Matsumoto Factory)

FUJI MAXIMUM AND MINIMUM VOLTAGE INDICATING METER, TYPE VH1PR

I. INTRODUCTION

In order to supervise and stabilize the quality of distribution power, it is necessary to grasp the voltage regulation of the distribution line. For the measurement of this voltage regulation we have accomplished a maximum and minimum voltage indicating meter, type VH1PR.

This meter is used for measuring the maximum and minimum voltage at optional period and suitable for the patrol measurement of the distribution line. This meter is portable, outdoor use type, and provided with the clamp mechanism of minimum indicator to prevent the indicator from going back to zero point under no potential state.

II. STRUCTURE AND PERFORMANCE

This meter is a thermal type voltmeter used a bimetal, and is equipped with three indicators, which consist of a driving indicator showing the present voltage such as a conventional voltmeter, a maximum indicator showing the maximum voltage and a minimum indicator showing the minimum voltage during the measuring period. Especially the minimum indicator has a clamp mechanism so as the minimum indicator to remain at the same position even when the meter is free from the measuring circuit and the driving indicator is returned to zero point. The driving indicator consists of a driving bimetal having the superior deflection characteristic and the high specific resistance, and of a temperature compensating bimetal. Those bimetals are fitted with a same axis in order that those thermal displacement work negatively. The electric current proportional to the line voltage is conducted to the driving bimetal through the transformer contained in the meter, and it generates heat in the bimetal itself, takes place a displacement, and indicates the line

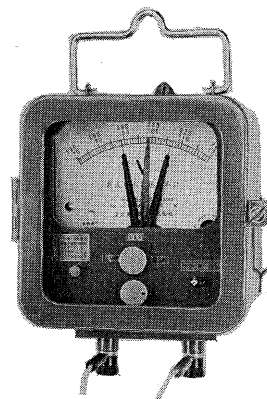


Fig. 1 Outer view of type VH1PR

voltage. According to the variation of the line voltage, the driving indicator drives the maximum and the minimum pointer and indicates the maximum and minimum voltage of the line. The minimum scale is 80/160 V at the meter of rated voltage 130/260 V, 70/140 V at the meter of the rated voltage 120/240 V, and the indication below this value is locked mechanically, so the measuring scale is enlarged substantially. The indication of line voltage follows exponentially with regards to time, and the time required to reach 90% of the line voltage, i.e. response time, is approx. 3.5 minutes. The maximum and minimum indicators are grease damped structure, sealed with special silicone grease, so are stable against the exterior vibration and shock.

1. Rating

- Working circuit : 110 V, 220 V (applicable to the both voltage)
- Rated voltage : (1) 130/260 V (double ratio)
(2) 120/240 V (double ratio)
- Frequency : 50/60 c/s.

2. Characteristics

- 1) Voltage characteristics :
Error will be under $\pm 1.5\%$ at the ambient

temperature 20°C.

2) Temperature characteristics :

Variation of error due to 10°C change of ambient temperature (between 0°C and 40°C) will be under 1.0%.

3) Influence of frequency :

The difference of errors between 50 c/s and 60 c/s will be under 0.5%.

4) Influence of over voltage :

Under the condition of the continuous indication of the rated voltage, there is no influence to the indication error even when twice as

much as the rated voltage is impressed on 5 seconds.

5) Other characteristics are in accordance with the JIS C 1102 "Indicating electric instrument".

3. Constants

- 1) Scale angle : 70°
- 2) Scale length : 92 mm
- 3) Full-load torque : 550 g-mm
- 4) Apparent power : 2.8 VA
- 5) Net weight : 2.8 kg

(By K. Shimoda, Matsumoto Factory)